REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested. Claims 1 and 15 are amended herewith. No new matter is believed to be added. Claims 1-20 are pending and under consideration in the present application.

Applicants thank the supervisor Examiner Steve McAllister for the courtesy of an interview granted to Applicant's representative on March 17, 2011 at which time the outstanding issues in this case were discussed. Arguments similar to the ones developed hereinafter were presented and the Examiner indicated that in light of the arguments, the amended claims appear to overcome the outstanding rejections.

CLAIM REJECTIONS UNDER 35 U.S.C. §103

Claims 1-20 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,658,856 to Critchley (hereinafter "Critchley") in view of U.S. Patent No. 5,428,956 to Maus et al. ("Maus").

Independent claims 1 and 15 are amended to explicitly specify that the electronic data processing unit regulates an opening of the first valve and second valve to minimize polluting emissions of CO and NOx of the combustion unit, based on the processed signals and the data base. The claim amendments are supported by the originally filed application, for example, page 9, line 8 to page 12, line 25.

Independent claim 1 patentably distinguishes over the applied references at least by reciting an electronic data processing unit that "receives the signals from the signal

acquisition device, processes the signals and, based on the processed signals and the data base, regulates an opening of the first valve and second valve to minimize polluting emissions of CO and NOx of the combustion unit."

In the outstanding Office Action (mailed on December 23, 2010), the Examiner sets forth the position that most of the above-identified feature are rendered obvious by Critchley's col. 4, lines 29-33 (reproduced below):

> Further, one embodiment is to provide closed loop control, wherein sensors will detect the temperature in the region of the catalyst exit, and provide a control signal to a controller that will adjust the air staging valve schedule to give the appropriate flame temperatures.

However, the above-reproduced teachings of Critchley merely suggest existence of a controller capable to adjust an air valve, but not to a controller or an electronic data processing unit capable to regulate both a fuel valve and an air valve on a bypass path "to minimize polluting emissions of CO and NOx of the combustion unit." In fact, a single air valve is present in Critchley.

In item 6 on page 3 of the outstanding Office Action, the Examiner acknowledges that Critchley fails to teach a fuel valve or adjusting a fuel valve. Then, in item 9 on the same page of the outstanding Office Action, the Examiner takes the position that the suggestion that the system for monitoring the catalytic activity in Maus may "influence" a fuel pump renders obvious "the controller controlling a fuel valve of some type." However, in fact, Maus discloses at most a controller controlling a single fuel valve.

To summarize, Applicants respectfully submit that a controlled air valve in Critchley and a controlled fuel valve in Maus are one-dimensional types of control, and

do not render obvious the claimed "based on the processed signals and the data base, [regulating] an opening of the first valve and second valve to minimize polluting emissions of CO and NOx of the combustion unit." In other words, according to these claims features, a two-dimensional (i.e., related to the first valve and to the second valve) control is performed. A person of skill in the art would understand that when a two dimensional control is performed the use of a roadmap such as data stored in a database is important in performing an efficient and fast adjustment of the controlled variables.

At least for this reason, claim 1 and claims 2-14 depending from claim 1 patentably distinguish over the applied references. The dependent claims patentably distinguish over the applied references by reciting additional patentably distinguishing features. For example, relative to claim 6, contrary to the Examiner's position in the outstanding Office Action, Critchley and Maus fail to render obvious "second pressure sensors disposed downstream from a turbine connected to the combustion chamber." The differential pressure mentioned in Maus is not the same as a pressure downstream a turbine connected to the combustion chamber, and sensors measuring this pressure (as specified in claim 6) are not rendered obvious by the fact that a turbine is mentioned in Critchley.

Additionally, Applicants respectfully submit that, in the outstanding Office Action, the Examiner has failed to set forth a prima facie case of obviousness relative to the third fuel inlet duct, the air distribution duct and the main fuel duct configured as recited

in claims 9 and 10, because Maus's "multiple fuel inlets" are not configured as the claimed ducts.

Independent claim 15 is amended to explicitly specify that the electronic data processing unit regulates an opening of the first valve and second valve to minimize polluting emissions of CO and NOx of the combustion unit, based not only on the processed signals and but also on the data base. This claim amendment is supported by the originally filed application, for example, page 9, line 8 to page 12, line 25.

Indpendent claim 15 and claims 16-20 depending from claim 15 patentably distinguish over the applied art at least due to the following features recited in claim 15: "said electronic data processing unit receives the signals from the signal acquisition device, processes the signals and regulates an opening of the fuel distribution valve and the air distribution valve to minimize polluting emissions of CO and NOx of the combustion unit based on the received signals and the data base." Arguments similar to the arguments set forth above relative to claim 1 are pertinent relative to claim 15 and are omitted for brevity. Also argument similar to the arguments set forth relative to claim 6 are pertinent for claim 17.

In view of the above, Applicants respectfully request the rejection of claims 1-20 under 35 U.S.C. § 103(a) over Critchley and Maus be withdrawn.

CONCLUSION

Accordingly, in light of the above discussion and in view of the enclosed amendments, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested. If, however, there are any remaining unresolved issues that would prevent the issuance of the Notice of Allowance, the Examiner is urged to contact the undersigned at (540) 479-4111 in order to expedite prosecution of this application.

Respectfully submitted,

POTOMAC PATENT GROUP PLLC

By: */Luminita A. TODOR/*
Luminita A. Todor, Ph.D.
Registration No. 57,639

Date: March 23, 2011
Customer No. 86661
Potomac Patent Group PLLC
P.O. Box 270
Fredericksburg, VA 22404
(540) 479-4111